

ICECUT™

LIGHT
POWERFUL
SAFE

*The ultimate
core cutting
system*



FEATURES

ALL ICECUT™ MAGNETIC DRILLING UNITS



1 CENTERED CONTROL PANEL

Centered positioning of the electronics for easy control from any position. Whether it's a personal preference, or if the operation requires drilling from a specific side, the central control panel allows for efficient and easy operation.



2 MANDREL SUPPORT

Absorbs vibration for added stability and easy centering. The ball bearing support ensures the motor and chuck are perfectly aligned. It also provides smooth and precise cutting operations, and reduces chipping or breakage of the cutter.



3 FULL BODY INTEGRATED WIRING

For convenience and improved durability. No electrical wires will get in the way while drilling or moving your unit. Moreover, this prevents common failures due to mishandling (like carrying the unit by the wire, or the wire catching on an object).



4 STEEL SLIDING GUARD

Easily accessible, and extra safe. Slide guard upwards, position unit, slide guard down and start drilling safely while containing chips and lubricant to prevent them from spilling out onto the rest of the work surface.



LIGHTWEIGHT

At 10 kg (22 lbs.) and 12.2 kg (27 lbs.) respectively, the ICECUT 100 and ICECUT 200 are the lightweight champions in their category. With a slim body, simplified carrying handle and powerful magnet, these units were designed with portability and ergonomics in mind.



SWIVEL BASE

As a feature for the ICECUT 300 and ICECUT 400, it allows to swivel the magnetic drill by 60° on each side, and also slide by 3" for a perfect and easy alignment.



5 DIRECT ACCESS

Direct access to carbon brushes makes maintenance simple. The powerful motor will always operate at maximum efficiency, and when it is time to change out the carbon brushes, their easily accessible location makes maintenance very convenient!



6 ERGONOMIC HANDLE

The ergonomic handle with a smooth grip – sturdy and lightweight - makes moving the unit easy. Its design further reduces overall weight, and the smooth grip ensures easy portability.



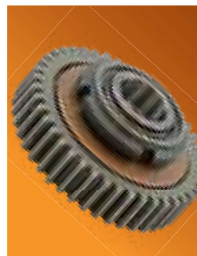
7 QUICK RELEASE REVERSIBLE HANDLE

Quick release reversible handle – allows for positioning in confined or restricted spaces. The handle can be removed and reattached on whichever side the operator prefers, making this a very user friendly system.



8 MATERIAL & THICKNESS DETECTOR

Unit will not start when the magnetic holding power is insufficient to secure the unit to the workpiece and operate safely. Prevents accidental starts: unit will not start on any non-ferrous material like wood, plastic, or when held in the air.



9 MECHANICAL CLUTCH

The ICECUT 200 has a safety slip clutch, built into the gear drive, that will neutralize momentum and eliminate dangerous backlash for added safety. Prevents cutter breakage.



EQUIPPED WITH SAFETY STRAP

For added security when hung upside down or for frame drilling operations.

ICECUT MINI™

NEW

Features

Measuring in at only 7-inches tall, the ICECUT MINI™ is the ultimate compact, low-profile magnetic drilling unit for making holes in tight spaces from H-beams to truck frames, and other applications where space may be limited. This unit has a powerful electromagnet for safety while drilling and **has a 2" x 2" drilling capacity**, making it the most versatile unit in its class.



**Lightweight unit
electromagnet**
For safety and functionality

**Low profile and
compact body**
*allows for making holes in
extremely tight spaces (7" tall)*

**DYNAMAX™
speed control**
*Ensures RPM speeds remain
constant even under load*

**2" x 2" drilling
capacity! The largest
on the market!**

Features

- ▷ Lightweight unit
- ▷ Electromagnet for safety and functionality
- ▷ Low profile and compact body allows for making holes in extremely tight spaces (7" tall)
- ▷ Walter's DYNAMAX™ speed control ensures RPM speeds remain constant even under load
- ▷ ACCUDRILL™ system protects unit from overload and the risk of cutter breakage
- ▷ **2" x 2" drilling capacity!**—Largest on the market!



"ACCUDRILL" system protects against overload and reduces the risk of cutter breakage. When you want to achieve the most productive drilling operation, you need to make sure you use the most power. This prevents the motor from overloading to reduce damage to the tool itself while also minimizing the risk of eventual damage to the cutter from overheating or movement.



Video available at The Walter Network
www.youtube.com/user/TheWalterNetwork

ICECUT MINI™

Low profile magnetic drilling unit for confined spaces

The ultimate compact, low-profile magnetic drilling unit for making holes in tight spaces from H-beams to truck frames, and other applications where space may be limited.



TECHNICAL DATA

Order No.	39-D 050
Watts	1200
Rated Amperage	10.0 A
Speeds	1-speed variable
DYNAMAX speed control	YES
No load RPM	250-500 RPM
Rated current	110-120V
Total Stroke	61 mm (2-3/8")
Core cutter capacity (diameter)	2" (50 mm)
Core cutter capacity (depth)	2" (50 mm)
Twist drill capacity (diameter)	N/A
Weight	10.5 kg
Swivel and sliding magnet	NO
Magnetic holding force (at 1")	10,000N
Max drill point pressure	2248 lbs (1020 kg)
Reversible handle	YES, tool-free ratchet handle
Powerguard motor overload protection	YES
Short-Circuit protection	YES
ACCUDRILL LED Torque display	YES, Integrated Ampmeter (both sides)
Magnetic field sensor	NO
Guard	YES, pivoting
Wiring	Internal
Lubrication	Not integrated
Control board	Rear, S/S switches with LEDs
Arbor	3/4" Weldon arbor fixed
Maintenance	Easy access to carbon brushes

ICECUT 100™ AND ICECUT 200™

Features

When you pair the best drilling machines with highly engineered annular cutters and superior cooling solutions, you know you have the best overall system for consistently drilling holes quickly and precisely with minimal interruption for changing out worn tooling.

DRILLING MADE EASY AND SAFE



“ACCUDRILL” system protects against overload and reduces the risk of cutter breakage. When you want to achieve the most productive drilling operation, you need to make sure you use the most power. This prevents the motor from overloading to reduce damage to the tool itself while also minimizing the risk of eventual damage to the cutter from overheating or movement.



Video available at The Walter Network
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ICECUT 100™

Compact and portable

Compact – extra lightweight – perfect when mobility is key.



ICECUT 200™

The versatile unit

Powerful – 2-speed – yet only 27 lbs – ideal for a wide range of production or job site operations.



TECHNICAL DATA

Order No.	39-D 100	39-D 200
Watts	850 W	1200 W
Speed	1 speed	2 speeds
No load RPM	600 RPM	Speed #1: 300 RPM / Speed #2: 600 RPM
Rated Current	8A	10A
Core cutter capacity (diameter)	1 3/8" (35 mm)	2" (52 mm)
Core cutter capacity (depth)	1 1/2" (38 mm)	2" (52 mm)
Twist drill capacity (diameter)	1/2" (stub length only)	1/2"
Tapping function	None	None
Weight	22 lbs (10 kg)	27 lbs (12.2 kg)
Swivel and sliding magnet	None	None
Max drill point pressure	1875 lbs (850 kg)	1875 lbs (850 kg)
Reversible handle	Tool free press-button	Tool free press-button
Powerguard electronic overload protection	Overload at 15A	Overload at 15A
Motor overload protection	None	Mechanical clutch
Short-Circuit protection	Integrated fuse	Integrated fuse
Accudrill LED torque display	Integrated Ampmeter	Integrated Ampmeter
Magnetic field sensor	Material and thickness detector	Material and thickness detector
Tool free guard	Metal, sliding up	Metal, sliding up
Wiring	Internal	Internal
Lubrication	On motor head	On motor head
Control board	Centered, s/s switches with LEDs	Centered, s/s switches with LEDs
Handle	Open on main housing	Open with anti-slip support
Arbor	WELDON shank with support	WELDON shank with support
Maintenance	Easy access to carbon brushes	Easy access to carbon brushes
Total Stroke	2.6"	2.9"

ICECUT 250™ AND ICECUT 250P™

Features

Get all the power and versatility from the ICECUT magnetic drilling systems, now available in a more compact size for easy portability. Use the ICECUT 250™ for ultimate versatility when drilling or tapping larger holes. The ICECUT 250P™ is the unit of choice for working on curved surfaces or pipes thanks to a convenient permanent magnet.



Variable Dialspeed
Electronic speed control for an optimized drilling operation ensuring a constant speed under load.

Reversible speed
Enables tapping operations.

Weighs only 35 pounds!

Taper Morse #2 with 1/4" Weldon shank
For easy mounting.

Powerful electromagnet



“ACCUDRILL” system protects against overload and reduces the risk of cutter breakage. When you want to achieve the most productive drilling operation, you need to make sure you use the most power. This prevents the motor from overloading to reduce damage to the tool itself while also minimizing the risk of eventual damage to the cutter from overheating or movement.



Variable Dialspeed
Electronic speed control for an optimized drilling operation ensuring a constant speed under load.

Reversible speed
Enables tapping operations.

Two pivoting electromagnetic and standard magnets
For curved surface drilling capability.

 **YouTube**
Video available at The Walter Network
www.youtube.com/user/TheWalterNetwork

ICECUT 250™

Lightweight, powerful
with variable speed

The powerful, intuitive and
lightweight ICECUT 250™
is a truly versatile machine,
especially for its size.

Tech tip!

Use carbide core cutter
05-D 518 with included morse
Tape Shank no. 2 to drill to
2-1/2" large holes.

3/4" Weldon shank
Diameter: 2-1/2"
Length: 1-1/2"



ICECUT 250P™

Drill faster and easier on
pipe-related jobs

The double magnet ICECUT
250P™ sets up fast for pipe
applications and is curved
surface-ready.



TECHNICAL DATA

Order No.	39-D 250	39-D 251
Watts	1550	1500
Speed	2-speeds + Reversible	2-speeds + Reversible
Dynamax variable speed control	YES	YES
No load RPM	100-500 RPM	100-500 RPM
Rated Current	15 amps	15 amps
Core cutter capacity (diameter)	2 1/2"	2 1/2"
Core cutter capacity (depth)	3" (w/ 2-piece pilot pin)	3" (w/ 2-piece pilot pin)
Twist drill capacity (diameter)	1/2"	1/2"
Tapping function	YES, up to 3/4" - 16	YES, up to 3/4" - 16
Weight	34.1 lbs	39.6 lbs
Swivel and sliding magnet	NO	NO
Max drill point pressure	3035 lbs (1376 kg)	3035 lbs (1376 kg)
Reversible handle	YES, TOOL-FREE press button	YES, TOOL-FREE press button
Powerguard motor overload protection	20A	20A
Powerguard electronic overload protection	27A	27A
Short-Circuit protection	YES, Integrated Fuse	YES, Integrated Fuse
Accudrill LED torque display	YES, Intergrated Ampmeter	YES, Intergrated Ampmeter
Magnetic field sensor	Material & thickness detector	NO (Permanent Magnet)
Tool free guard	Metal, sliding	Metal, sliding
Wiring	Internal	Internal
Lubrication	Internal thru feed, on motor head	Internal thru feed, on motor head
Control board	Centered, S/S switches with LEDs	Centered, S/S switches with LEDs
Handle	1 reversible on main housing, 1 pistol grip	1 reversible on main housing, 1 pistol grip
Arbor	Morse Taper 2 shank; 3/4" Weldon	Morse Taper 2 shank; 3/4" Weldon
Maintenance	Easy access to carbon brushes	Easy access to carbon brushes
Total Stroke	5.5"	5.5"

ICECUT 300™ AND ICECUT 400™

Features

Now you can get all the benefits of using an ICECUT magnetic drilling machine while using annular cutters up to 4" wide and a depth of up to 4". To make the drilling operation even safer and easier, each machine features a swivel base for easy positioning of the tool along with our top-of-the-line safety features such as DIALSPEED™, POWERGUARD™ and DYNAMAX™.

Drill more, bigger, faster and safer!



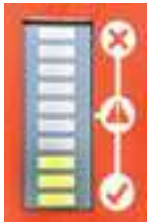
Variable Dialspeed
Electronic speed control for an optimized drilling operation ensuring a constant speed under load.

Powerguard
Electronic overload built-in protection on motor.

Taper Morse Weldon shank #3
For easy mounting.

Swivel base
The magnetic drill can swivel 60° on each side, and also slide by 3" for an easy alignment.

"ACCUDRILL" system protects against overload and reduces the risk of cutter breakage. When you want to achieve the most productive drilling operation, you need to make sure you use the most power. This prevents the motor from overloading to reduce damage to the tool itself while also minimizing the risk of eventual damage to the cutter from overheating or movement.



Reversible speed
Enables tapping operations.

Second carrying handle
Located on the back for a safer, more secure grip.

ICECUT 300™

For deeper, wider holes

With a swivel base and electronic speed control, allows you to drill safer and faster.



ICECUT 400™

The most powerful and most versatile unit

With 4 mechanically-controlled speeds and a wider RPM range, this powerful tool can tackle any drilling operation with ease.



TECHNICAL DATA

Order No.	39-D 300	39-D 400
Watts	1800 W	2000 W
Speed	2-speeds + reversible	4-speeds + reversible
Dynamax variable speed control	Yes	Yes
No load RPM	Speed #1: 70-180 RPM / Speed #2: 200-500 RPM	Speed #1: 45-129 RPM / Speed #2: 70-208 RPM Speed #3: 150-434 RPM / Speed #4: 240-700 RPM
Rated Current	18A	20A
Core cutter capacity (diameter)	3" (75 mm)	4" (100 mm)
Core cutter capacity (depth)	3" (75 mm)	4" (100 mm)
Twist drill capacity (diameter)	1 ¼" (31.75 mm)	1 ¼" (31.75 mm)
Tapping function	Yes (1 ¼")	Yes (1 ½")
Weight	52 lbs (23.5 kg)	54.5 lbs (24.8 kg)
Swivel and sliding magnet	Swivel 120°, sliding 2"	Swivel 120°, sliding 2"
Max drill point pressure	4160 lbs (1890 kg)	4950 lbs (2240 kg)
Reversible handle	Tool free press-button	Tool free press-button
Powerguard motor overload protection	Overload at 22A	Overload at 24A
Powerguard electronic overload protection	Overload at 25A	Overload at 27A
Short-Circuit protection	Integrated fuse	Integrated fuse
Accudrill LED torque display	Integrated Ampmeter	Integrated Ampmeter
Magnetic field sensor	Material and thickness detector	Material and thickness detector
Tool free guard	Metal, sliding up	Metal, sliding up
Wiring	Internal	Internal
Lubrication	On motor head	On motor head
Control board	Centered, s/s switches with LEDS	Centered, s/s switches with LEDS
Handle	1 on main housing, 1 rear handle	1 on main housing, 1 rear handle
Arbor	WELDON taper morse #3	WELDON taper morse #3
Maintenance	Easy access to carbon brushes	Easy access to carbon brushes
Total Stroke	9.4"	10.2"

ICECUT SYSTEMS

ICECUT MINI™ - ICECUT 100™ - ICECUT 200™ - ICECUT 250™
 ICECUT 250P™ - ICECUT 300™ - ICECUT 400™



Includes a 1/2" chuck adaptor for drilling smaller holes



For larger holes, 1/2" and above, use the magnetic base with the standard Weldon shank



COMES IN A FOAM PADDED CASE FOR SUPERIOR PROTECTION

ICECUT 300 (39D300)	RPM			
	SPEED 1	SPEED 2	SPEED 3	SPEED 4
DIALSPEED™ RPM Setting	↓	↑		
1	70	200	x	x
2	92	260	x	x
3	114	320	x	x
4	136	380	x	x
5	158	440	x	x
6	180	500	x	x

ICECUT 400 (39D400)	RPM			
	SPEED 1	SPEED 2	SPEED 3	SPEED 4
DIALSPEED™ RPM Setting (Left/Right)	↓/↑	↓/↓	↑/↑	↑/↓
1	45	70	150	240
2	62	98	207	332
3	79	126	264	424
4	96	154	321	516
5	113	181	378	608
6	129	208	434	700

Model	Order No.	No load RPM	Motor	Amps	Twist drill capacity (diameter)	Annular cutter	Max. drilling depth	Magnet strength	Weight
ICECUT MINI	39-D 050	250-500 RPM	120V .A.C.	10A	N/A	2"	2"	2248 lbs	23.1 lbs
ICECUT 100	39-D 100	600 RPM	120V .A.C.	8A	1/2" (stub length only)	1 3/8"	1 1/2"	1875 lbs	22 lbs
ICECUT 200	39-D 200	Speed #1: 300 RPM Speed #2: 600 RPM	120V .A.C.	10A	1/2"	2"	2"	1875 lbs	27 lbs
ICECUT 250	39-D 250	Speed #1: 100-265 RPM Speed #2: 200-500 RPM	120V .A.C.	15A	1/2"	2 3/8"	3"	3035 lbs	34.1 lbs
ICECUT 250P	39-D 251	Speed #1: 100-265 RPM Speed #2: 200-500 RPM	120V .A.C.	15A	1/2"	2 3/8"	3"	3035 lbs	39.6 lbs
ICECUT 300	39-D 300	Speed #1: 70-180 RPM Speed #2: 200-500 RPM	120V .A.C.	18A	1 1/4"	3"	3"	4160 lbs	52 lbs
ICECUT 400	39-D 400	Speed #1: 45-129 RPM Speed #2: 70-208 RPM Speed #3: 150-434 RPM Speed #4: 240-700 RPM	120V .A.C.	20A	1 1/4"	4"	4"	4950 lbs	54.5 lbs

STANDARD EQUIPMENT FOR ICECUT 100 AND 200: Carrying case 48-H 423 (ICECUT 100), 48-H 422 (ICECUT 200), lubrication system (48-H 310), 1/2" keyed chuck (39-D 006), Chuck adaptor (39-D 005), M6 T-handle hexagonal key (48-Z 004), Allen key (48-Z 003), safety strap (48-H 329), safety glasses (48-H 424), reversible press button (48-H 324), triple handle (48-H 323), chuck key (39-D 009).

STANDARD EQUIPMENT FOR ICECUT 300 AND 400: Carrying case, chuck, arbor assembly, safety glasses, arbor shank, drift punch, safety belt, 3 mm hexagonal, spanner, stationary ring, spare carbon brushes, coolant bottle assembly.

Straight Drill 716-B – 5/8"

End handle drill with a heavy-duty 120V motor and 2-speed gear box. Use low speed to drill large holes with extra torque and high speed to drill small holes. The reversing feature makes this drill also suitable for tapping applications.



Model	Order No.	Speed under load	Motor	Capacities - Steel		Twist drill	Hole saw	Weight
				Max. torque	Amps			
716-B	38-A 716	0-430/760 rev.	120V A.C.	30/17 Nm	9.2	5/8"	3"	9 lbs

STANDARD EQUIPMENT: 5/8" capacity keyed chuck 22-A 072, chuck key 22-A 202, side handle (model 716) 48-E 063 and 9 ft. cord.

Decimals and metric equivalents of drill sizes

Drill size	Dec. equiv.	mm	Drill size	Dec. equiv.	mm	Drill size	Dec. equiv.	mm	Drill size	Dec. equiv.	mm
1/64"	.0156	0.40	—	.1142	2.90	5	.2055	5.22	41/64"	.6406	16.27
1/32"	.0313	0.80	32	.1160	2.95	4	.2090	5.31	21/32"	.6562	16.67
60	.0400	1.02	31	.1200	3.05	3	.2130	5.41	49/64"	.6719	17.07
59	.0410	1.04	1/8"	.1250	3.18	7/32"	.2188	5.56	11/16"	.6875	17.46
58	.0420	1.07	30	.1285	3.26	2	.2210	5.61	45/64"	.7031	17.86
57	.0430	1.09	—	.1299	3.30	1	.2280	5.79	23/32"	.7188	18.26
56	.0465	1.18	29	.1360	3.45	15/64"	.2344	5.95	47/64"	.7344	18.65
3/64"	.0469	1.19	28	.1405	3.57	1/4"	.2500	6.35	3/4"	.7500	19.05
55	.0520	1.32	9/64"	.1406	3.58	F	.2570	6.53	49/64"	.7656	19.45
54	.0550	1.40	27	.1440	3.66	—	.2638	6.70	25/32"	.7812	19.84
53	.0595	1.51	26	.1470	3.73	17/64"	.2656	6.75	13/16"	.8125	20.64
1/16"	.0625	1.59	25	.1495	3.80	9/32"	.2812	7.15	27/32"	.8438	21.43
52	.0635	1.61	24	.1520	3.86	19/64"	.2969	7.54	7/8"	.8750	22.23
51	.0670	1.70	23	.1540	3.91	5/16"	.3125	7.94	57/64"	.8906	22.62
50	.0700	1.78	9/32"	.1562	3.97	21/64"	.3281	8.33	29/32"	.9062	23.02
49	.0730	1.85	22	.1570	3.99	—	.3346	8.50	59/64"	.9219	23.42
48	.0760	1.93	21	.1590	4.04	11/32"	.3438	8.73	15/16"	.9375	23.81
5/64"	.0781	1.98	20	.1610	4.09	23/64"	.3594	9.13	61/64"	.9531	24.21
47	.0785	1.99	—	.1654	4.20	U	.3680	9.35	31/32"	.9688	24.61
—	.0787	2.00	19	.1660	4.22	3/8"	.3750	9.53	63/64"	.9844	25.00
46	.0810	2.06	18	.1695	4.31	25/64"	.3906	9.92	1"	1.0000	25.40
45	.0820	2.08	11/64"	.1719	4.37	—	.4016	10.20	1 1/32"	1.0312	26.19
44	.0860	2.18	17	.1730	4.39	13/32"	.4062	10.32	1 1/16"	1.0625	26.98
43	.0890	2.26	16	.1770	4.50	27/64"	.4219	10.72	1 3/32"	1.0938	27.78
42	.0935	2.37	15	.1800	4.57	7/16"	.4375	11.11	1 1/8"	1.1250	28.58
3/32"	.0938	2.38	14	.1820	4.62	29/64"	.4531	11.51	1 5/32"	1.1562	29.37
41	.0960	2.44	13	.1850	4.70	15/32"	.4688	11.91	1 3/16"	1.1875	30.16
40	.0980	2.49	3/16"	.1875	4.76	31/64"	.4844	12.30	1 7/32"	1.2188	30.96
—	.0984	2.50	12	.1890	4.80	1/2"	.5000	12.70	1 1/4"	1.2500	31.75
39	.0995	2.53	11	.1910	4.85	33/64"	.5156	13.10	1 9/32"	1.2812	32.54
38	.1015	2.58	10	.1935	4.91	17/32"	.5312	13.50	1 5/16"	1.3125	33.34
37	.1040	2.64	9	.1960	4.98	35/64"	.5469	13.90	1 11/32"	1.3438	34.13
36	.1065	2.71	—	.1969	5.00	9/16"	.5625	14.29	1 3/8"	1.3750	34.93
7/64"	.1094	2.78	8	.1990	5.05	37/64"	.5781	14.68	1 13/32"	1.4062	35.72
35	.1100	2.79	7	.2010	5.11	19/32"	.5938	15.08	1 7/16"	1.4375	36.51
34	.1110	2.82	13/64"	.2031	5.16	39/64"	.6094	15.48	1 15/32"	1.4688	37.31
33	.1130	2.87	6	.2040	5.18	5/8"	.6250	15.88	1 1/2"	1.5000	38.10

Maximum cutting speeds
for SST power taps - RPM

Tap dia.	Mild steel	Stainless steel	Aluminium
#6	800	500	1,600
#8	670	400	1,500
#10	600	350	1,400
#12	550	300	1,200
1/4"	450	250	1,000
5/16"	370	200	850
3/8"	300	150	700
7/16"	260	120	600
1/2"	230	100	500

Recommended max. RPM for through holes. Reduce speed by one-third for blind holes. Make sure blind hole is deep enough to allow chips to accumulate at the bottom.

**Recommended cutting speed for HSS+Co
Twist Drill Bits**

Cutter Dia.		100	70	40	200
Cutter Dia.		Mild Steel	Steel	Stainless Steel	Aluminium
Inch	mm	500N/mm ²	900N/mm ²		
1/16"	1.6	6112	4278	2445	12224
1/8"	3.2	3056	2139	1222	6112
3/16"	4.8	2037	1426	815	4075
1/4"	6.4	1528	1070	611	3056
5/16"	7.9	1222	856	489	2445
3/8"	9.5	1019	713	407	2037
7/16"	11.1	873	611	349	1746
1/2"	12.7	764	535	306	1528
9/16"	14.3	679	475	272	1358
5/8"	15.9	611	428	244	1222
11/16"	17.5	556	389	222	1111
3/4"	19.1	509	357	204	1019
13/16"	20.6	470	329	188	940
7/8"	22.2	437	306	175	873
15/16"	23.8	407	285	163	815
1"	25.4	382	267	153	764
1 1/16"	27	360	252	144	719
1 1/8"	28.6	340	238	136	679
1 3/16"	30.2	322	225	129	643
1 1/4"	31.8	306	214	122	611
1 5/16"	33.3	291	204	116	582
1 3/8"	34.9	278	194	111	556
1 7/16"	36.5	266	186	106	531
1 1/2"	38.1	255	178	102	509

* SFM = Surface Feet per Minute
Optimal RPM = SFM x 3.82/Diameter (in.)

**Recommended cutting speed for M2Al HSS
Countersinks (82°)**

Cutter Dia.		Aluminium	Copper	Mild Steel	Stainless Steel	Non-metallic Steel
Inch	mm					
1/4"	6.4	1505	1404	752	602	1755
5/16"	7.9	1203	1123	602	481	1404
3/8"	9.5	1004	937	502	401	1171
7/16"	11.1	861	803	430	344	1004
1/2"	12.7	752	702	376	301	878
9/16"	14.3	669	624	335	268	781
5/8"	15.9	602	562	301	241	702
11/16"	17.5	547	511	274	219	638
3/4"	19.1	502	468	251	201	585
13/16"	20.6	463	432	231	185	540
7/8"	22.2	430	401	215	172	502
15/16"	23.8	401	375	201	161	468
1"	25.4	376	351	188	150	439
1 1/16"	27	354	331	177	142	413
1 1/8"	28.6	334	312	167	134	390
1 3/16"	30.2	317	296	158	127	370
1 1/4"	31.8	251	234	125	100	293
1 9/16"	39.7	241	225	120	96	281
1 5/8"	41.3	231	216	116	93	270
1 11/16"	42.9	223	208	111	89	260
1 3/4"	44.5	215	201	107	86	251
1 13/16"	46	208	194	104	83	242
1 7/8"	47.6	201	187	100	80	234
1 15/16"	49.2	194	181	97	78	227
2"	50.8	188	176	94	75	219

**Recommended cutting speed for MULTI-STEP^{MC}
M2Al HSS Drill Bits**

Diameter		Aluminium	Copper	Mild Steel	Stainless Steel	Non-metallic
mm	Inch					
12.7	1/2"	1003	878	502	376	1128
14.3	9/16"	892	781	446	335	1004
15.9	5/8"	802	702	401	301	902
17.5	11/16"	730	638	365	274	821
19.1	3/4"	669	585	334	251	752
20.6	13/16"	617	540	309	231	694
22.2	7/8"	573	502	287	215	645
23.8	15/16"	535	468	268	201	602
25.4	1"	502	439	251	188	564
27.0	1-1/16"	472	413	236	177	531
28.6	1-1/8"	446	390	223	167	502
30.2	1-3/16"	422	370	211	158	475
31.8	1-1/4"	401	351	201	150	451
33.3	1-5/16"	382	334	191	143	430
34.9	1-3/8"	365	319	182	137	410

* Choose RPM based on LARGEST step diameter

Recommended cutting speed for CARBIDE CORE CUT annular cutter

Diameter		Mild Steel	Steel	Steel	Steel	Steel	Stainless Steel	Aluminium
mm	Inch	500N/mm ²	750N/mm ²	900N/mm ²	1200N/mm	1400N/mm ²		
11.1	7/16"	1147	1061	1003	860	717	573	2580
12.7	1/2"	1003	928	878	752	627	502	2257
14.3	9/16"	892	825	781	669	558	446	2007
15.9	5/8"	802	742	702	602	501	401	1805
17.5	11/16"	730	675	638	547	456	365	1642
19.1	3/4"	669	619	585	502	418	334	1505
20.6	13/16"	617	571	540	463	386	309	1389
22.2	7/8"	573	530	502	430	358	287	1290
23.8	15/16"	535	495	468	401	334	268	1204
25.4	1"	502	464	439	376	313	251	1128
27.0	1-1/16"	472	437	413	354	295	236	1062
28.6	1-1/8"	446	412	390	334	279	223	1003
30.2	1-3/16"	422	391	370	317	264	211	950
31.8	1-1/4"	401	371	351	301	251	201	903
33.3	1-9/16"	382	353	334	287	239	191	860
34.9	1-3/8"	365	337	319	274	228	182	821
36.5	1-7/16"	349	323	305	262	218	174	785
38.1	1-1/2"	334	309	293	251	209	167	752
39.7	1-9/16"	321	297	281	241	201	161	722
41.3	1-5/8"	309	285	270	231	193	154	694
42.9	1-11/16"	297	275	260	223	186	149	669
44.5	1-3/4"	287	265	251	215	179	143	645
46.0	1-13/16"	277	256	242	208	173	138	623
47.6	1-7/8"	267	247	234	201	167	134	602
49.2	1-15/16"	259	239	227	194	162	129	582
50.8	2"	251	232	219	188	157	125	564
52.4	2-1/16"	243	225	213	182	152	122	547
54.0	2-1/8"	236	218	207	177	148	118	531
55.6	2-3/16"	229	212	201	172	143	115	516
57.2	2-1/4"	223	206	195	167	139	111	502
58.7	2-5/16"	217	201	190	163	136	108	488
60.4	2-3/8"	211	195	185	158	132	106	475
61.9	2-7/16"	206	190	180	154	129	103	463
63.5	2-1/2"	201	186	176	150	125	100	451
65.1	2-9/16"	196	181	171	147	122	98	440
66.7	2-5/8"	191	177	167	143	119	96	430
68.3	2-11/16"	187	173	163	140	117	93	420
69.9	2-3/4"	182	169	160	137	114	91	410
71.4	2-13/16"	178	165	156	134	111	89	401
73.0	2-7/8"	174	161	153	131	109	87	393
74.6	2-15/16"	171	158	149	128	107	85	384
76.2	3"	167	155	146	125	104	84	376
77.8	3-1/16"	164	151	143	123	102	82	368
79.4	3-1/8"	160	148	140	120	100	80	361
81.0	3-3/16"	157	146	138	118	98	79	354
82.6	3-1/4"	154	143	135	116	96	77	347
84.1	3-5/16"	151	140	132	114	95	76	341
85.7	3-3/8"	149	137	130	111	93	74	334
87.3	3-7/16"	146	135	128	109	91	73	328
88.9	3-1/2"	143	133	125	107	90	72	322
90.5	3-9/16"	141	130	123	106	88	70	317
92.1	3-5/8"	138	128	121	104	86	69	311
93.7	3-11/16"	136	126	119	102	85	68	306
95.3	3-3/4"	134	124	117	100	84	67	301
96.8	3-13/16"	132	122	115	99	82	66	296
98.4	3-7/8"	129	120	113	97	81	65	291
100.0	3-15/16"	127	118	111	96	80	64	287
101.6	4"	125	116	110	94	78	63	282

Recommended cutting speed for SST™ CORE CUT and ICECUT™ annular cutter

Diameter		Mild Steel	Steel	Steel	Steel	Steel	Stainless	Aluminum
mm	Inch	500N/mm ²	750N/mm ²	900N/mm ²	1200N/mm	1400N/mm ²	Steel	
11.1	7/16"	717	573	373	287	201	344	1433
12.7	1/2"	627	502	326	251	176	301	1254
14.3	9/16"	558	446	290	223	156	268	1115
15.9	5/8"	501	401	261	201	140	241	1003
17.5	11/16"	456	365	237	182	128	219	912
19.1	3/4"	418	334	217	167	117	201	836
20.6	13/16"	386	309	201	154	108	185	771
22.2	7/8"	358	287	186	143	100	172	717
23.8	15/16"	334	268	174	134	94	161	669
25.4	1"	313	251	163	125	88	150	627
27.0	1-1/16"	295	236	153	118	83	142	590
28.6	1-1/8"	279	223	145	111	78	134	557
30.2	1-3/16"	264	211	137	106	74	127	528
31.8	1-1/4"	251	201	130	100	70	120	502
33.3	1-5/16"	239	191	124	96	67	115	478
34.9	1-3/8"	228	182	119	91	64	109	456
36.5	1-7/16"	218	174	113	87	61	105	436
38.1	1-1/2"	209	167	109	84	59	100	418
39.7	1-9/16"	201	161	104	80	56	96	401
41.3	1-5/8"	193	154	100	77	54	93	386
42.9	1-11/16"	186	149	97	74	52	89	372
44.5	1-3/4"	179	143	93	72	50	86	358
46.0	1-13/16"	173	138	90	69	48	83	346
47.6	1-7/8"	167	134	87	67	47	80	334
49.2	1-15/16"	162	129	84	65	45	78	324
50.8	2"	157	125	81	63	44	75	313
52.4	2-1/16"	152	122	79	61	43	73	304
54.0	2-1/8"	148	118	77	59	41	71	295
55.6	2-3/16"	143	115	75	57	40	69	287
57.2	2-1/4"	139	111	72	56	39	67	279
58.7	2-5/16"	136	108	70	54	38	65	271
60.4	2-3/8"	132	106	69	53	37	63	264

Taper pipe tap drill sizes NPT and NPTF

Tap size	Drill size	Tap size	Drill size
1/8" - 27	11/32"	1" - 11 1/2	1 5/32"
1/4" - 18	7/16"	1 1/4" - 11 1/2	1 1/2"
3/8" - 18	37/64"	1 1/2" - 11 1/2	1 47/64"
1/2" - 14	45/64"	2" - 11 1/2	2 7/32"
3/4" - 14	29/32"		

Recommended feed for annular cutter

Material	Feed (mm/r)	Coolant (ml/min)
Steel 500N/mm ²	0.08-0.13	60-80
Steel 750N/mm ²	0.08-0.13	60-80
Steel 900N/mm ²	0.05-0.1	80-100
Steel 1200N/mm ²	0.05-0.1	80-100
Steel 1400N/mm ²	0.05-0.1	80-100
Stainless Steel	0.05-0.1	150-200
Aluminum	0.1-0.15	80-100

Tap drill sizes - fractional

Tap size	Thread form	Drill size	Tap size	Thread form	Drill size	Tap size	Thread form	Drill size
2-56	NC	50	1/4"-28	NF	3	9/16"-18	NF	33/64"
3-48	NC	47	5/16"-18	NC	F	5/8"-11	NC	17/32"
4-40	NC	43	5/16"-24	NF	17/64"	5/8"-18	NF	37/64"
5-40	NC	38	3/8"-16	NC	5/16"	3/4"-10	NC	21/32"
6-32	NC	36	3/8"-24	NF	21/64"	3/4"-16	NF	11/16"
8-32	NC	29	7/16"-14	NC	U	7/8"-9	NC	49/64"
10-24	NC	25	7/16"-20	NF	25/64"	7/8"-14	NF	13/16"
10-32	NF	21	1/2"-13	NC	27/64"	1-8	NC	7/8"
12-24	NC	16	1/2"-20	NF	29/64"	1-12	NF	15/16"
1/4"-20	NC	7	9/16"-12	NC	31/64"	1-14	NS	15/16"

Tap drill sizes - metric

SIZE gauge/	PITCH	Drill wire	
	mm		mm
M2.5	.45	2.0	46
M3	.5	2.5	40
M3.5	.6	2.9	33
M4	.7	3.3	30
M5	.8	4.2	19
M6	1.0	5.0	9
M8	1.25	6.7	17/64"
M10	1.5	8.5	21/64"
M12	1.75	10.2	13/32"